

**Case Study**



**WARRIGAL AGED CARE**

## PROJECT DESCRIPTION

Warrigal Aged Care is a leading provider of aged care services in the wider Illawarra region and is committed to providing exceptional living standards for all residents across all of their 17 locations.

The Wollongong facility, one of its flagship locations with 155 rooms offers a range of aged care services, including residential care, respite care, and specialized dementia care. As part the management's team goal of continuously seeking innovative solutions to enhance the comfort and well-being of its residents, they were looking for a reliable, and energy efficient hot water solution for their facility.

## PROJECT REQUIREMENTS & CHALLENGES

Warrigal faced the challenge of maintaining a reliable and energy-efficient hot water supply for its large residential population. With a high daily demand for hot water due to the facility's size and the nature of aged care services, the existing natural gas system was becoming increasingly costly to both operate and maintain.

The project called for a solution that could meet the high demand for hot water while reducing energy consumption while also minimizing the facility's carbon footprint. Key challenges of this project was retrofitting the replacement system into the existing infrastructure and space while also minimizing downtime at the facility.

### PROJECT DETAILS

Warrigal Aged Care  
Wollongong, NSW

### COMPLETION DATE

August 2023

### CONTRACTOR

Eymael Plumbing  
Paul - 02 9674 5644

### SYSTEMS INSTALLED

4 x ESA30EH2-25 Q-ton Systems  
8 x 1,000L Stainless Steel Tanks

### MHI REPRESENTATIVE

Jason Parsons – +61 477 660 987



## MHI'S SOLUTION

After careful consideration and discussions with the facility management and the installing contractor, the Q-ton air-to-water heat pump system was ultimately selected as the ideal solution. The Q-ton system, renowned for its high efficiency and environmental benefits, uses CO2 as a refrigerant which is a natural and eco-friendly alternative to traditional refrigerants. This allows it to efficiently deliver reliable hot water between 60°C to 90°C at ambient temperatures as low as -25°C.

Q-ton features an innovative two-stage compressor that combines rotary and scroll technology, ensuring maximum efficiency and performance. With a coefficient of performance (COP) of 4.3 during intermediate seasons, the system offers substantial energy savings. Thanks to its Japanese design and engineering, Q-ton offered long-term reliability with low maintenance needs, which is essential for a facility like Warrigal Aged Care that requires uninterrupted service.

A standout feature of Q-ton is its ability to perform an inbuilt legionella sanitary cycle, which plays a critical role in ensuring the health and safety of the facility's occupants. This cycle heats the water to a temperature that effectively eliminates legionella bacteria, a pathogen that can cause severe respiratory illnesses, particularly in vulnerable populations such as the elderly. The regular completion of this sanitary cycle not only complies with stringent health regulations but also provides peace of mind to both the facility's management and the residents.





## MHI'S SOLUTION CONT.

The compact design allowed 4 x Q-ton units and 8 x 1,000L stainless steel storage tanks to be seamlessly integrated into the existing infrastructure with the solution spread across two small, designated plantrooms. The advanced touch-screen controller allows for easy monitoring and management of the hot water supply, ensuring that the facility operates efficiently while maintaining high standards of comfort for the residents.

Thanks to the expertise of the installing plumber, the system was designed and commissioned in a way that ensured minimal disruption during installation and residents reported no noticeable changes to hot water operation and can be scale up to meet increased demand in the future. Work is currently continuing with another 2 x Q-ton systems and 2 water tanks to be installed shortly.

## RESULTS

Since the installation of the Q-ton system, Warrigal Aged Care Wollongong has experienced significant benefits:

- **Energy Efficiency:** The facility has achieved a notable reduction in energy consumption, leading to lower operational costs.
- **Environmental Impact:** The use of CO2 as a refrigerant has substantially reduced the facility's carbon emissions, aligning with Warrigal's commitment to sustainability and reducing its environmental footprint.
- **Reliability:** The Q-ton system has provided a consistent and reliable supply of hot water, even during peak usage periods.
- **Cost Savings:** The combination of energy efficiency and reduced maintenance has resulted in significant cost savings for the facility, allowing resources to be allocated to other areas of resident care and facility





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